

CLAIMS

What is claimed is:

1. A tensioning mechanism, comprising:
 - a tension spring assembly for applying a tensioning force;
 - a cam assembly for applying a rotational force to the tension spring assembly;
 - a cover assembly adjustably coupled with the cam assembly, the cover assembly including a handle for enabling a user to selectively engage the cover assembly with the cam assembly in an index position, the handle having a first tensioning position and a second tensioning position for translating the user selected tensioning force to the tension spring assembly through the cam assembly; and
 - an index indicator coupled with the cover assembly, the index indicator for indicating the index position for the cover assembly to enable the translation of the desired tensioning force,
 - wherein the index indicator enables the quick selection by the user of the amount of tensioning force to be applied.
2. The tensioning mechanism of claim 1, wherein the tensioning mechanism may be connected with a power tool, wherein the power tool may be a band saw.
3. The tensioning mechanism of claim 1, wherein the tension spring assembly further comprises:
 - a tension spring for applying the tensioning force;
 - a fine adjustment assembly coupled with the tension spring, the fine adjustment assembly for enabling a fine adjustment of the tension spring; and
 - a plunger coupled with the fine adjustment assembly, the plunger for translating the rotational force from the cam assembly to the tension spring.
4. The tensioning mechanism of claim 1, wherein the cam assembly further comprises:

a cam including a cam actuation member and a pin, the cam for coupling with the tension spring assembly; and

a cam actuator coupled with the cam actuation member,

wherein the cam assembly applies a rotational force to the tension spring assembly.

5. The tensioning mechanism of claim 4, wherein the pin couples with the tension spring assembly.

6. The tensioning mechanism of claim 1, wherein the cover assembly further comprises:

a cover coupled with the handle, the cover enabled to selectively engage with the cam assembly;

a biasing assembly coupled with the cover, the biasing assembly enabling the selective engagement of the cover with the cam assembly; and

an index indicator coupled with the cover, the index indicator establishing a visual marker for user identification of the index position of the cover.

7. The tensioning mechanism of claim 6, wherein the biasing assembly includes a biasing member coupled with a spring, wherein the biasing assembly enables the handle and cover into a first biasing position and second biasing position.

8. The tensioning mechanism of claim 6, wherein the visual marker is selected from the group consisting of a line, an arrowed line, a symbol, a logo, a numeric representation, and a textual representation, for identifying the index position.

9. The tensioning mechanism of claim 6, wherein the handle may be established in a plurality of positions.

10. The tensioning mechanism of claim 6, wherein the handle is removable from the cover.
11. The tensioning mechanism of claim 1, further comprising a securing assembly.

12. A tensioning mechanism for a band saw including a frame coupled with an upper band wheel which operationally engages a band saw blade, comprising:

a tension spring assembly operationally engaged with an upper arm of the frame, the tension spring assembly applying a tensioning force to the upper band wheel;

a cam assembly operationally engaging with the tension spring assembly, the cam assembly for applying a rotational force to the tension spring assembly; and

a cover assembly adjustably coupled with the cam assembly, the cover assembly including a handle for enabling a user to selectively engage the cover assembly with the cam assembly in an index position, the handle having a first tensioning position and a second tensioning position for translating the user selected tensioning force to the tension spring assembly through the cam assembly; and

an index indicator coupled with the cover assembly, the index indicator for indicating the index position for the cover assembly to enable the translation of the desired tensioning force,

wherein the index indicator enables the quick selection by the user of the amount of tensioning force to be applied to the band saw blade.

13. The tensioning mechanism of claim 12, wherein the tension spring assembly further comprises:

a tension spring for applying the tensioning force;

a fine adjustment assembly coupled with the tension spring, the fine adjustment assembly for enabling a fine adjustment of the tension spring; and

a plunger coupled with the fine adjustment assembly, the plunger for translating the rotational force from the cam assembly to the tension spring.

14. The tensioning mechanism of claim 12, wherein the cam assembly further comprises:

a cam including a cam actuation member and a pin, the cam for coupling with the tension spring assembly; and

a cam actuator coupled with the cam actuation member,
wherein the cam assembly applies a rotational force to the tension spring assembly.

15. The tensioning mechanism of claim 14, wherein the pin couples with the tension spring assembly.

16. The tensioning mechanism of claim 14, wherein the pin is removable from the cam.

17. The tensioning mechanism of claim 12, wherein the cover assembly further comprises:

a cover coupled with the handle, the cover enabled to selectively engage with the cam assembly;

a biasing assembly coupled with the cover, the biasing assembly enabling the selective engagement of the cover with the cam assembly; and

an index indicator coupled with the cover, the index indicator establishing a visual marker for user identification of the index position of the cover.

18. The tensioning mechanism of claim 17, wherein the biasing assembly includes a biasing member coupled with a spring, wherein the biasing assembly enables the handle and cover into a first biasing position and second biasing position.

19. The tensioning mechanism of claim 17, wherein the visual marker is selected from the group consisting of a line, an arrowed line, a symbol, a logo, a numeric representation, and a textual representation, for identifying the index position.

20. The tensioning mechanism of claim 17, wherein the handle is removable from the cover.

21. The tensioning mechanism of claim 17, wherein the handle may be established in a plurality of positions.
22. The tensioning mechanism of claim 12, further comprising a securing assembly.
23. The tensioning mechanism of claim 12, wherein the band saw further comprises a cabinet dust collection system.
24. The tensioning mechanism of claim 12, wherein the band saw further comprises a positive angle stop assembly.
25. The tensioning mechanism of claim 12, wherein the band saw further includes a standard blade tensioning device.

26. A band saw having a frame coupled with a lower band wheel, the lower band wheel operationally engaged by a motor, an upper band wheel, the upper band wheel vertically aligned with the lower band wheel and operationally engaging a band saw blade, and an upper arm including a sliding tension bracket, the sliding tension bracket coupled with the upper band wheel, comprising:

a recessed area defined within the sliding tension bracket;

a tension spring assembly having a tension spring disposed within the recessed area, the tension spring for applying a tensioning force which is translated through the sliding tension bracket to the upper band wheel;

a cam assembly operationally engaging with the tension spring assembly, the cam assembly for applying a rotational force to the tension spring; and

a cover assembly adjustably coupled with the cam assembly, the cover assembly including a handle for enabling a user to selectively engage the cover assembly with the cam assembly in an index position, the handle having a first tensioning position and a second tensioning position for translating the user selected tensioning force to the tension spring assembly through the cam assembly; and

an index indicator coupled with the cover assembly, the index indicator for indicating the index position for the cover assembly to enable the translation of the desired tensioning force,

wherein the index indicator enables the quick selection by the user of the amount of tensioning force to be applied to the band saw blade based on the size of the band saw blade.

27. The band saw of claim 26, wherein the tension spring assembly further comprises:

a fine adjustment assembly coupled with the tension spring, the fine adjustment assembly for enabling a fine adjustment of the tension spring; and

a plunger coupled with the fine adjustment assembly, the plunger for translating the rotational force from the cam assembly to the tension spring.

28. The band saw of claim 26, wherein the cam assembly further comprises:
a cam including a cam actuation member and a pin, the cam for coupling with the tension spring assembly; and
a cam actuator coupled with the cam actuation member,
wherein the cam assembly applies a rotational force to the tension spring assembly.
29. The band saw of claim 28, wherein the pin couples with the tension spring assembly.
30. The band saw of claim 28, wherein the pin is removable from the cam.
31. The band saw of claim 26, wherein the cover assembly further comprises:
a cover coupled with the handle, the cover enabled to selectively engage with the cam assembly;
a biasing assembly coupled with the cover, the biasing assembly enabling the selective engagement of the cover with the cam assembly; and
an index indicator coupled with the cover, the index indicator establishing a visual marker for user identification of the index position of the cover.
32. The band saw of claim 31, wherein the biasing assembly includes a biasing member coupled with a spring, wherein the biasing assembly enables the handle and cover into a first biasing position and second biasing position.
33. The band saw of claim 31, wherein the visual marker is selected from the group consisting of a line, an arrowed line, a symbol, a logo, a numeric representation, and a textual representation, for identifying the index position.
34. The band saw of claim 31, wherein the handle is removable from the cover.

- 35. The band saw of claim 31, wherein the handle may be established in a plurality of positions.
- 36. The band saw of claim 26, further comprising a securing assembly.
- 37. The band saw of claim 26, further comprising a cabinet dust collection system.
- 38. The band saw of claim 26, further comprising a positive angle stop assembly.
- 39. The band saw of claim 26, further includes a standard blade tensioning device.

40. A tensioning mechanism for a band saw including an upper band wheel operationally engaging a band saw blade, comprising:
means for selecting an amount of tension to apply to the band saw blade; and
means for applying the selected amount of tension to the band saw blade.
41. The tensioning mechanism of claim 40, wherein the means for selecting an amount of tension to apply to the band saw blade further comprises:
a cover assembly including a biasing assembly which enables a user to selectively engage the cover assembly in an index position; and
an index indicator coupled with the cover assembly, the index indicator for indicating the index position for the cover assembly,
wherein the index indicator enables the quick selection by the user of the amount of tensioning force to be applied to the band saw blade.
42. The tensioning mechanism of claim 40, wherein the means for applying the selected amount of tension to the band saw blade, further comprises:
a tension spring assembly coupled with the band saw, the tension spring assembly applying a tensioning force to the upper band wheel;
a cam assembly operationally engaging with the tension spring assembly, the cam assembly for applying a rotational force to the tension spring assembly;
a handle having a first tensioning position and a second tensioning position for translating the user selected tensioning force to the tension spring assembly through the cam assembly

43. A method for adjusting the tension of a band saw blade operationally coupled with an upper band wheel of a band saw, comprising:

positioning a tension mechanism comprising a tension spring assembly operationally engaged with the upper band wheel, a cam assembly coupled with the tension spring assembly, a cover assembly which may be selectively engaged with the cam assembly by a user, and an index indicator enabling the user to quickly determine an index position of the cover assembly based on the size of the band saw blade, followed by at least one step selected from the group consisting of;

positioning the cover assembly, relative to the cam assembly, in the index position indicated by the index indicator, and rotating a handle of the cover assembly from a first tensioning position to a second tensioning position whereby the tension spring assembly moves the upper band wheel in a first linear direction increasing tension on the band saw blade; and

rotating the handle to the first tensioning position from the second tensioning position whereby the tension spring assembly moves the upper band wheel in a second direction decreasing tension on the band saw blade.

44. The method of claim 43, further comprising the step of determining operation of the band saw after the tension handle has been rotated into the first or second tensioning positions.
45. The method of claim 43, further comprising the step of adjusting the tensioning force provided by the tension mechanism through engagement with a fine adjustment assembly with the handle positioned in the second tensioning position.